

electronic locomotive control system shall address all of the following elements and shall be specified in the training program.

(1) Familiarization with the electronic control system equipment on-board the locomotive and the functioning of that equipment as part of the system and in relation to other on-board systems under that person's control;

(2) Any actions required of the operating personnel to enable or enter data into the system and the role of that function in the safe operation of the train;

(3) Sequencing of interventions by the system, including notification, enforcement, penalty initiation and post penalty application procedures as applicable;

(4) Railroad operating rules applicable to control systems, including provisions for movement and protection of any unequipped trains, or trains with failed or cut-out controls;

(5) Means to detect deviations from proper functioning of onboard elec-

tronic control system equipment and instructions explaining the proper response to be taken regarding control of the train and notification of designated railroad personnel; and

(6) Information needed to prevent unintentional interference with the proper functioning of onboard electronic control equipment.

(b) The training required under this subpart for a locomotive engineer and conductor, together with required records, shall be integrated into the program of training required by parts 240 and 242 of this chapter.

APPENDIX A TO PART 229—FORM FRA 6180-49A

EDITORIAL NOTE: Appendix A, published at 45 FR 21118, Mar. 31, 1980, as part of the original document, is not carried in the CFR. Copies of Form FRA F6180-49A are available by contacting the Federal Railroad Administration, Office of Standards and Procedures, 1200 New Jersey Avenue, SE., Washington, DC 20590.

[45 FR 21109, Mar. 31, 1980, as amended at 74 FR 25174, May 27, 2009]

APPENDIX B TO PART 229—SCHEDULE OF CIVIL PENALTIES¹

Section	Violation	Willful violation
Subpart A—General		
229.7 Prohibited acts: Safety deficiencies not governed by specific regulations: To be assessed on relevant facts	\$1,000–5,000	\$2,000–7,500
229.9 Movement of noncomplying locomotives	(¹)	(¹)
229.11 Locomotive identification	1,000	2,000
229.13 Control of locomotives	2,500	5,000
229.15 Remote control locomotives	2,500	5,000
229.17 Accident reports	2,500	5,000
229.19 Prior Waivers	(¹)	(¹)
Subpart B—Inspection and tests		
229.21 Daily inspection:		
(a)(b):		
(1) Inspection overdue	2,000	4,000
(2) Inspection report not made, improperly executed, or not retained	1,000	2,000
(c) Inspection not performed by a qualified person	1,000	2,000
229.23 Periodic inspection General:		
(a)(1) Inspection overdue	2,500	5,000
(a)(2) Inspection performed improperly or at a location where the underneath portion cannot be safely inspected	2,500	5,000
(b)(1) Inspection overdue	2,500	5,000
(b)(2) Inspection overdue	2,500	5,000
(c) Inspection overdue	2,500	5,000
(e):		
(1) Form missing	1,000	2,000
(2) Form not properly displayed	1,000	2,000
(3) Form improperly executed	1,000	2,000
(f) Replace Form FRA F 6180.49A by April 2 or July 3		
(g) Secondary record of the information reported Form FRA F 6180.49A	1,000	2,000

Section		Violation	Willful viola- tion
229.25	Tests: every periodic inspection:		
	(a) through (d)(4) and (e) and (f) Tests	2,500	5,000
	(d)(5) Ineffective maintenance	8,000	16,000
229.27	Annual tests	2,500	5,000
229.29	Biennial tests	2,500	5,000
229.31:			
	(a) Biennial hydrostatic tests of main reservoirs	2,500	5,000
	(b) Biennial hammer tests of main reservoirs	2,500	5,000
	(c) Drilled telltale holes in welded main reservoirs	2,500	5,000
	(d) Biennial tests of aluminum main reservoirs	2,500	5,000
229.33	Out-of-use credit	1,000	2,000
Subpart C—Safety Requirements			
229.41	Protection against personal injury	2,500	5,000
229.43	Exhaust and battery gases	2,500	5,000
229.45	General condition: To be assessed based on relevant facts	1,000–5,000	2,000–7,500
229.46	Brakes: General	2,500	5,000
229.47	Emergency brake valve	2,500	5,000
229.49	Main reservoir system:		
	(a)(1) Main reservoir safety valve	2,500	5,000
	(2) Pneumatically actuated control reservoir	2,500	5,000
	(b)(c) Main reservoir governors	2,500	5,000
229.51	Aluminum main reservoirs	2,500	5,000
229.53	Brake gauges	2,500	5,000
229.55	Piston travel	2,500	5,000
229.57	Foundation brake gear	2,500	5,000
229.59	Leakage	2,500	5,000
229.61	Draft system	2,500	5,000
229.63	Lateral motion	2,500	5,000
229.64	Plain bearing	2,500	5,000
229.65	Spring rigging	2,500	5,000
229.67	Trucks	2,500	5,000
229.69	Side bearings	2,500	5,000
229.71	Clearance above top of rail	2,500	5,000
229.73	Wheel sets	2,500	5,000
229.75	Wheel and tire defects:		
	(a),(d) Slid flat or shelled spot(s):		
	(1) One spot 2½" or more but less than 3" in length	2,500	5,000
	(2) One spot 3" or more in length	5,000	7,500
	(3) Two adjoining spots each of which is 2" or more in length but less than 2½" in length	2,500	5,000
	(4) Two adjoining spots each of which are at least 2" in length, if either spot is 2½" or more in length	5,000	7,500
	(b) Gouge or chip in flange of:		
	(1) more than 1½" but less than 1⅝" in length; and more than ½" but less than ⅝" in width	2,500	5,000
	(2) 1⅝" or more in length and ⅝" or more in width	5,000	7,500
	(c) Broken rim	5,000	7,500
	(e) Seam in tread	2,500	5,000
	(f) Flange thickness of:		
	(1) ⅞" or less but more than 13⁄16"	2,500	5,000
	(2) 13⁄16" or less	5,000	7,500
	(g) Tread worn hollow	2,500	5,000
	(h) Flange height of:		
	(1) 1½" or greater but less than 1⅝"	2,500	5,000
	(2) 1⅝" or more	5,000	7,000
	(i) Tire thickness	2,500	5,000
	(j) Rim thickness:		
	(1) Less than 1" in road service and ¾" in yard service	2,500	5,000
	(2) 1⅞" or less in road service and 1⅞" in yard service	5,000	7,500
	(k) Crack of less than 1"	5,000	7,500
	(1) Crack of less than 1"	2,500	5,000
	(2) Crack of 1" or more	5,000	7,500
	(3) Break	5,000	7,500
	(l) Loose wheel or tire	5,000	7,500
	(m) Welded wheel or tire	5,000	7,500
229.77	Current collectors	2,500	5,000
229.79	Third rail shoes and beams	2,000	4,000
229.81	Emergency pole; shoe insulation	2,500	5,000
229.83	Insulation or grounding	5,000	7,500
229.85	Door and cover plates marked "Danger"	2,500	5,000
229.87	Hand operated switches	2,500	5,000

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Section	Violation	Willful violation
229.89 Jumpers; cable connections:		
(a) Jumpers and cable connections; located and guarded	2,500	5,000
(b) Condition of jumpers and cable connections	2,500	5,000
229.91 Motors and generators	2,500	5,000
229.93 Safety cut-off device	2,500	5,000
229.95 Venting	2,500	5,000
229.97 Grounding fuel tanks	2,500	5,000
229.99 Safety hangers	2,500	5,000
229.101 Engines:		
(a) Temperature and pressure alarms, controls, and switches	2,500	5,000
(b) Warning notice	2,500	5,000
(c) Wheel slip/slide protection	2,500	5,000
229.103 Safe working pressure; factor of safety	2,500	5,000
229.105 Steam generator number	1,000	1,500
229.107 Pressure gauge	2,500	5,000
229.109 Safety valves	2,500	5,000
229.111 Water-flow indicator	2,500	5,000
229.113 Warning notice	2,500	5,000
229.114 Steam generator inspections and tests	2,500	5,000
229.115 Slip/slide alarms	2,500	5,000
229.117 Speed indicators	2,500	5,000
229.119 Cabs, floors, and passageways:		
(a)(1) Cab set not securely mounted or braced	2,500	5,000
(2) Insecure or improper latching device	2,500	5,000
(b) Cab windows of lead locomotive	2,500	5,000
(c) Floors, passageways, and compartments	2,500	5,000
(d) Ventilation and heating arrangement	2,500	5,000
(e) Continuous barrier	2,500	5,000
(f) Containers for fuses and torpedoes	2,500	5,000
(g) Failure to equip	2,500	5,000
(h) Failure to maintain	2,500	5,000
(i) Failure to equip	2,500	5,000
229.121 Locomotive Cab Noise:		
(a) Performance Standards		
(1) Failure to meet sound level	5,000	7,500
(2) Improper maintenance alterations	2,500	5,000
(3) Failure to comply with static test protocols	2,500	5,000
(b) Maintenance of Locomotives		
(1) Failure to maintain excessive noise report record or respond to report as required	2,500	5,000
(3) Failure to make good faith effort as required	2,500	5,000
(4) Failure to maintain record as required	2,000	4,000
229.123 Pilots, snowplows, end plates	2,500	5,000
229.125		
(a) Headlights	2,500	5,000
(d) Auxiliary lights	2,500	5,000
229.127 Cab lights	2,500	5,000
229.129 Locomotive horn:		
(a) Prescribed sound levels	2,500	5,000
Arrangement of horn	2,500	5,000
(b) Failure to perform sound level test	2,500	5,000
(c) Sound level test improperly performed	2,500	5,000
Record of sound level test improperly executed, or not retained	1,000	4,000
229.131 Sanders	1,000	2,000
229.135 Event Recorders:		
(a) Lead locomotive without in-service event recorder	2,500	5,000
(b) Failure to meet equipment requirements	2,500	5,000
(c) Unauthorized removal or failure to remove from service	2,500	5,000
(d) Improper response to out of service event recorder	2,500	5,000
(e) Failure to preserve data or unauthorized extraction of data	2,500	5,000
(g) Tampering with device or data	2,500	5,000
229.137 Sanitation, general:		
(a) Sanitation compartment in lead unit, complete failure to provide required items	\$5,000	\$10,000
(1) Ventilation	2,500	5,000
(2) Door missing	2,000	4,000
(2)(i) Door doesn't close	1,000	2,000
(2)(ii) No modesty lock	1,000	2,000
(3) Not equipped with toilet in lead	5,000	10,000
(4) Not equipped with washing system	1,000	2,000
(5) Lack of paper	1,000	2,000
(6) Lack of trash receptacle	1,000	2,000
(b) Exceptions:		
(1)(i) Commuter service, failure to meet conditions of exception	2,500	5,000

Section	Violation	Willful viola- tion
(1)(ii) Switching service, failure to meet conditions of exception	2,500	5,000
(1)(iii) Transfer service, failure to meet conditions of exception	2,500	5,000
(1)(iv) Class III, failure to meet conditions of exception	2,500	5,000
(1)(v) Tourist, failure to meet conditions of exception	2,500	5,000
(1)(vi) Control cab locomotive, failure to meet conditions of exception	2,500	5,000
(2) Noncompliant toilet	5,000	10,000
(c) Defective/unsanitary toilet in lead unit	2,500	5,000
(1–5) Failure to meet conditions of exception	2,500	5,000
(d) Defective/unsanitary unit; failure to meet conditions for trailing position	2,500	5,000
(e) Defective/sanitary unit; failure to meet conditions for switching/transfer service	2,500	5,000
(f) Paper, washing, trash holder; failure to equip prior to departure	2,500	5,000
(g) Inadequate ventilation; failure to repair or move prior to departure	2,500	5,000
(h) Door closure/modesty lock; failure to repair or move	1,000	2,000
(i) Failure to retain/maintain of equipped units	2,500	5,000
(j) Failure to equip new units/in-cab facility	2,500	5,000
(k) Failure to provide potable water	2,500	5,000
229.139 Servicing requirements:		
(a) Lead occupied unit not sanitary	2,500	5,000
(b) Components not present/operating	2,500	5,000
(c) Occupied unit in switching, transfer service, in trailing position not sanitary	2,500	5,000
(d) Defective unit used more than 10 days	2,500	5,000
(e) Failure to repair defective modesty lock	1,000	2,000
229.140 Alerters	2,500	5,000
229.141 Body structure, MU locomotives	2,500	5,000
Subpart D—Locomotive Crashworthiness Design Requirements		
229.205 General requirements:		
(a)(1) Wide-nose locomotive not designed in compliance with AAR S–580–2005	\$5,000	\$7,500
(2) Wide-nose locomotive not designed in compliance with new approved design standard	5,000	7,500
(3) Wide-nose locomotive not designed in compliance with alternate approved design standard	5,000	7,500
(b) Monocoque or semi-monocoque locomotive not in compliance with design requirements	5,000	7,500
(c) Narrow-nose not in compliance with design requirements	5,000	7,500
229.206 Design requirements:		
Locomotive fails to meet—		
(1) Emergency egress requirements	2,500	5,000
(2) Emergency interior lighting requirements	2,500	5,000
(3) Interior configuration requirements	2,500	5,000
229.213 Locomotive manufacturing information:		
(a) Failure to retain required information	2,500	5,000
(b) Failure to produce required information	2,500	5,000
229.215 Retention and inspection of designs:		
(a) Failure to retain required design records	2,500	5,000
(b) Failure to retain required repair or modification records	2,500	5,000
(c) Failure to make records available when requested	2,500	5,000
229.217 Fuel tank:		
(a) External fuel tank	5,000	7,500
(b) Internal fuel tank	5,000	7,500
Subpart E—Locomotive Electronics		
229.307 Safety analysis:		
(a) Failure to establish and maintain a safety analysis	5,000	10,000
(b) Failure to provide safety analysis upon request	2,500	5,000
(c) Failure to comply with safety analysis	5,000– 10,000	15,000
229.309 Safety-critical changes and failure:		
(a)(1) Failure to notify FRA	1,000	2,000
(a)(2) Failure to update safety analysis	3,500	7,000
(a)(4) Failure to notify manufacturer	10,000	15,000
(b) Failure to notify railroad	10,000	15,000
(c) Failure to establish and maintain program	3,500	7,000
229.311 Review of SAs:		
(a) Failure to notify FRA	1,000	2,000
(b) Failure to report	1,000	2,000
(c) Failure to correct safety hazards	5,000– 10,000	15,000
(d) Failure to final report	1,000	2,000
229.313 Product testing results and records:		
(a) Failure to maintain records and database	5,000	10,000
(b) Incomplete testing records	3,500	7,000

Section	Violation	Willful violation
(c) Improper signature	3,500	7,000
229.315 Operations and maintenance manual:		
(a) Failure to implement and maintain manual	5,000	10,000
(c) Failure to document revisions	5,000	10,000
(d) Failure to follow plan	5,000–10,000	15,000
229.317 Training and qualification program:		
(a) Failure to establish and implement program	5,000	10,000
(b) Failure to conduct training	2,500	5,000
(g) Failure to evaluate program	2,500	5,000
(h) Failure to maintain records	1,500	3,000
229.319 Operating personnel training	2,500	5,000

¹ A penalty may be assessed against an individual only for a willful violation. Generally, when two or more violations of these regulations are discovered with respect to a single locomotive that is used by a railroad, the appropriate penalties set forth above are aggregated up to a maximum of \$16,000 per day. However, a failure to perform, with respect to a particular locomotive, any of the inspections and tests required under subpart B of this part will be treated as a violation separate and distinct from, and in addition to, any substantive violative conditions found on that locomotive. Moreover, the Administrator reserves the right to assess a penalty of up to \$105,000 for any violation where circumstances warrant. See 49 CFR part 209, appendix A.

Failure to observe any condition for movement set forth in § 229.9 will deprive the railroad of the benefit of the movement-for-repair provision and make the railroad and any responsible individuals liable for penalty under the particular regulatory section(s) concerning the substantive defect(s) present on the locomotive at the time of movement. Failure to comply with § 229.19 will result in the lapse of any affected waiver.

[53 FR 52931, Dec. 29, 1988, as amended at 58 FR 36615, July 8, 1993; 61 FR 8888, Mar. 6, 1996; 63 FR 11622, Mar. 10, 1998; 67 FR 16052, Apr. 4, 2002; 69 FR 30594, May 28, 2004; 70 FR 21920, Apr. 27, 2005; 70 FR 37942, June 30, 2005; 71 FR 36915, June 28, 2006; 71 FR 47667, Aug. 17, 2006; 71 FR 63136, Oct. 27, 2006; 72 FR 51197, Sept. 6, 2007; 73 FR 79703, Dec. 30, 2008; 77 FR 21351, Apr. 9, 2012; 77 FR 24421, Apr. 24, 2012]

APPENDIX C TO PART 229—FRA LOCOMOTIVE STANDARDS—CODE OF DEFECTS

EDITORIAL NOTE: Appendix C, published at 45 FR 21121, Mar. 31, 1980, as part of the original document, is not carried in the CFR.

APPENDIX D TO PART 229—CRITERIA FOR CERTIFICATION OF CRASHWORTHY EVENT RECORDER MEMORY MODULE

Section 229.135(b) requires that certain locomotives be equipped with an event recorder that includes a certified crashworthy event recorder memory module. This appendix prescribes the requirements for certifying an event recorder memory module (ERMM) as crashworthy, including the performance criteria and test sequence for establishing the crashworthiness of the ERMM as well as the marking of the event recorder containing the crashworthy ERMM.

A. GENERAL REQUIREMENTS

1. Each manufacturer that represents its ERMM as crashworthy shall, by marking it as specified in Section B of this appendix, certify that the ERMM meets the performance criteria contained in this appendix and that test verification data are available to a railroad or to FRA upon request.

2. The test verification data shall contain, at a minimum, all pertinent original data logs and documentation that the test sample preparation, test set up, test measuring de-

vices and test procedures were performed by designated, qualified personnel using recognized and acceptable practices. Test verification data shall be retained by the manufacturer or its successor as long as the specific model of ERMM remains in service on any locomotive.

3. A crashworthy ERMM shall be marked by its manufacturer as specified in Section B of this appendix.

B. MARKING REQUIREMENTS

1. The outer surface of the event recorder containing a certified crashworthy ERMM shall be colored international orange. In addition, the outer surface shall be inscribed, on the surface allowing the most visible area, in black letters on an international orange background, using the largest type size that can be accommodated, with the words CERTIFIED DOT CRASHWORTHY, followed by the ERMM model number (or other such designation), and the name of the manufacturer of the event recorder. This information may be displayed as follows:

CERTIFIED DOT CRASHWORTHY

Event Recorder Memory Module Model Number

Manufacturer's Name

Marking "CERTIFIED DOT CRASHWORTHY" on an event recorder designed for installation in a railroad locomotive is the certification that all performance criteria contained in this appendix have been met and all functions performed by, or on behalf of, the manufacturer whose name appears as